

The Electrical Nature of Matter

All matter contains **electric charges**, which are either evenly or unevenly distributed. When a balloon is rubbed against hair, the electric charges are rearranged into an uneven distribution. This "charges" the balloon with electricity.

The uneven distribution of charges often remains that way for short or longer time periods. Because the charge remains where the object was rubbed, the electric charge is called **static**, and the study of static electric charges is called **electrostatics**.

An **uncharged object** has an equal number of positive and negative electric charges. When two substances are rubbed together:

- one becomes **negatively charged** (has more negative charges than positive)
- the other becomes **positively charged** (has more positive charges than negative)
- both objects now have the ability to attract a **neutral** (uncharged) object

Two objects with the same charge will repel each other, while two objects with opposite charges will attract one another. The **law of electric charges** states that like charges repel one another, and unlike charges attract one another.